

WHAT IS CLAIMED IS:

1. A monolayer or multilayer article produced from a composition comprising a hydrogenated block copolymer, wherein the hydrogenated block copolymer comprises at least two distinct blocks of hydrogenated vinyl aromatic polymer, and at least one block of hydrogenated conjugated diene polymer, wherein the copolymer is further characterized by:

5 a) a weight ratio of hydrogenated conjugated diene polymer block to hydrogenated vinyl aromatic polymer block of 40:60 or less;

10 b) a total number average molecular weight ( $M_n$ ) of from 30,000 to 150,000, wherein each hydrogenated vinyl aromatic polymer block (A) has a  $M_n$  of from 6,000 to 60,000 and each hydrogenated conjugated diene polymer block (B) has a  $M_n$  of from 3,000 to 30,000; and

15 c) a hydrogenation level such that each hydrogenated vinyl aromatic polymer block has a hydrogenation level of greater than 90 percent and each hydrogenated conjugated diene polymer block has a hydrogenation level of greater than 95 percent.

2. The article of Claim 1 wherein the hydrogenated vinyl aromatic polymer block is selected from the group consisting of hydrogenated polystyrene, a hydrogenated alpha-methylstyrene polymer, a hydrogenated vinyltoluene, a hydrogenated copolymer of styrene and alpha-methylstyrene, and a hydrogenated copolymer of styrene and vinyl toluene; and the hydrogenated conjugated diene polymer block is selected from the group consisting of hydrogenated polybutadiene, hydrogenated polyisoprene, and a hydrogenated copolymer of butadiene and isoprene.

3. The article of Claim 1 wherein the composition additionally comprises at 25 least one additional polymer.

4. The article of Claim 3 wherein the other polymer is selected from the group consisting of hydrogenated vinyl aromatic homopolymers, other hydrogenated vinyl aromatic/conjugated diene block copolymers, thermoplastic polyurethanes,

polycarbonates (PC), polyamides, polyethers, poly/vinyl chloride polymers, poly/vinyldene chloride polymers, polyesters, polymers that contain lactic acid residuals, partially or non-hydrogenated vinyl aromatic/conjugated diene block polymers, a styrenic polymer, acrylonitrile-butadiene-styrene (ABS) copolymers, 5 styrene-acrylonitrile copolymers (SAN), ABS/PC polymers, polyethylene terephthalate, epoxy resins, ethylene vinyl alcohol copolymers, ethylene acrylic acid copolymers, polyolefin carbon monoxide interpolymers, chlorinated polyethylene, cyclic olefin copolymers (COC's), and olefin homopolymers and copolymers.

5. The article of Claim 4 wherein the additional polymer is selected from  
10 the group consisting of a polyolefin, ethylene/styrene interpolymer, a partially or non-  
hydrogenated vinyl aromatic/conjugated diene block copolymer, a styrenic polymer,  
hydrogenated polystyrene, an other hydrogenated vinyl aromatic/conjugated diene block  
copolymer and a cyclic olefin (co) polymer derived from monomers selected from the  
following group: substituted and unsubstituted norbornenes, dicyclopentadienes,  
15 dihydromethylcyclopentadienes, trimers of cyclopentadiene, tetracyclododecenes,  
hexacycloheptadecenes, ethylenyl norbornenes and vinylnorbornenes.

6. The article of Claim 1, wherein the hydrogenated block copolymer is  
present in an amount of from 0.5 to 99.5 weight percent, based on the total weight of  
the composition.

20 7. The article of Claim 1 wherein the composition additionally comprises a  
compatibilizer.

8. The article of Claim 1 which is selected from the group consisting of a  
film or sheet, a fiber, an extruded profile, a coated article, an injection molded article, a  
blow molded article, a rotational molded article, and a pultruded article.

25 9. The article of Claim 8 which is a capacitor film, a membrane switch,  
blister packaging, a UV protection film, biaxially oriented film, uniaxially oriented  
film, weatherable film or sheet, label, release liner, window film for envelope or box,  
medical packaging film, a tray, a liquid crystal panel, a cap layer for polyolefin sheet, a

key pad, a flat panel display, optical display panel, a window blind, window blind wand, tubing, pipe, construction siding, roofing product, window trim, glazing, ceiling panel, solar collector, flat panel display, thermoformed container, wind screen, bug deflector, sun roof, basketball backboard, cap layer for polyolefin sheet, electronic  
5 optical fiber, fiber glass, fiber reinforcement, filter media, textile, nonwoven article, yarn, a refrigerator shelf, crisper drawer, a lens, reusable flatware, tumbler, pitcher, toothbrush or hairbrush handle, tool handle, medical labware, syringe, a bottle, a toy, an injection blow molded article, container, light globe, storage tank, furniture, whirlpool tub, boat, camper top, advertising display sign, rack, mannequin, a composite pipe, a  
10 safety barricade, a structural beam, or a reinforcing member.

10. A composition comprising:

I) at least one hydrogenated block copolymer which comprises at least two distinct blocks of hydrogenated vinyl aromatic polymer, and at least one block of hydrogenated conjugated diene polymer, wherein the copolymer is further characterized  
15 by:

a) a weight ratio of hydrogenated conjugated diene polymer block to hydrogenated vinyl aromatic polymer block of 40:60 or less;

b) a total number average molecular weight ( $M_{n_t}$ ) of from 30,000 to 150,000, wherein each hydrogenated vinyl aromatic polymer block (A) has a  $M_{n_a}$  of from 6,000  
20 to 60,000 and each hydrogenated conjugated diene polymer block (B) has a  $M_{n_b}$  of from 3,000 to 30,000; and

c) a hydrogenation level such that each hydrogenated vinyl aromatic polymer block has a hydrogenation level of greater than 90 percent and each hydrogenated conjugated diene polymer block has a hydrogenation level of greater than 95 percent,  
25 and

II) at least one additional polymer.

11. The composition of Claim 10 wherein the additional polymer is selected from the group consisting of hydrogenated vinyl aromatic homopolymers, other hydrogenated vinyl aromatic/conjugated diene block copolymers, thermoplastic polyurethanes, polycarbonates (PC), polyamides, polyethers, poly/vinyl chloride polymers, poly/vinylidene chloride polymers, polyesters, polymers that contain lactic acid residuals, partially or non-hydrogenated vinyl aromatic/conjugated diene block copolymers, styrenic polymers, acrylonitrile-butadiene-styrene (ABS) copolymers, styrene-acrylonitrile copolymers (SAN), ABS/PC polymers, polyethylene terephthalate, epoxy resins, ethylene vinyl alcohol copolymers, ethylene acrylic acid copolymers, 5 polyolefin carbon monoxide interpolymers, chlorinated polyethylene, cyclic olefin polymers (COC's), and olefin homopolymers and copolymers.

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12. The composition of Claim 11 wherein the additional polymer is selected from the group consisting of a polyolefin, ethylene/styrene interpolymer, a partially or non-hydrogenated vinyl aromatic/conjugated diene block copolymer, a styrenic 15 polymer, hydrogenated polystyrene, an other hydrogenated vinyl aromatic/conjugated diene block copolymer and a cyclic olefin (co) polymer derived from monomers selected from the following group: substituted and unsubstituted norbornenes, dicyclopentadienes, dihydromethylcyclopentadienes, trimers of cyclopentadiene, tetracyclododecenes, hexacycloheptadecenes, ethylenyl norbornenes and 20 vinylnorbornenes.

13. The composition of Claim 10, wherein the hydrogenated block copolymer is present in an amount of from 0.5 to 99.5 weight percent, based on the total weight of the composition.

14. The composition of Claim 10 wherein the composition additionally 25 comprises a compatibilizer.

15. A composition comprising:

I') a dispersed polymer phase comprising at least one hydrogenated block copolymer which comprises at least two distinct blocks of hydrogenated vinyl

aromatic polymer, and at least one block of hydrogenated conjugated diene polymer, wherein the copolymer is further characterized by:

- a) a weight ratio of hydrogenated conjugated diene polymer block to hydrogenated vinyl aromatic polymer block of 40:60 or less;
- 5           b) a total number average molecular weight ( $M_n$ ) of from 30,000 to 150,000, wherein each hydrogenated vinyl aromatic polymer block (A) has a  $M_n$  of from 6,000 to 60,000 and each hydrogenated conjugated diene polymer block (B) has a  $M_n$  of from 3,000 to 30,000; and

- 10           c) a hydrogenation level such that each hydrogenated vinyl aromatic polymer block has a hydrogenation level of greater than 90 percent and each hydrogenated conjugated diene polymer block has a hydrogenation level of greater than 95 percent, and

II') a surfactant, and

III') a continuous phase which is immiscible with the polymer phase.

- 15           16. The composition of Claim 15 wherein the hydrogenated vinyl aromatic polymer block is selected from the group consisting of hydrogenated polystyrene, hydrogenated alpha-methylstyrene polymer, hydrogenated vinyltoluene polymer, a hydrogenated copolymer of styrene and alpha-methylstyrene, and hydrogenated styrene-vinyltoluene copolymer and the hydrogenated conjugated diene polymer block is selected from the group consisting of hydrogenated polybutadiene, hydrogenated polyisoprene, and a hydrogenated copolymer of butadiene and isoprene.
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- 25           17. The composition of Claim 15 additionally comprising a polymer selected from the group consisting of hydrogenated vinyl aromatic homopolymers, other hydrogenated vinyl aromatic/conjugated diene block copolymers, thermoplastic polyurethanes, polycarbonates (PC), polyamides, polyethers, poly/vinyl chloride polymers, poly/vinylidene chloride polymers, polyesters, polymers that contain lactic acid residuals, partially or non-hydrogenated vinyl aromatic/conjugated diene block

polymers, a styrenic polymer, acrylonitrile-butadiene-styrene (ABS) copolymers, styrene-acrylonitrile copolymers (SAN), ABS/PC polymers, polyethylene terephthalate, epoxy resins, ethylene vinyl alcohol copolymers, ethylene acrylic acid copolymers, polyolefin carbon monoxide interpolymers, chlorinated polyethylene, cyclic olefin  
5 copolymers (COC's), and olefin homopolymers and copolymers.

18. The composition of Claim 17 wherein the additional polymer is selected from the group consisting of a polyolefin, a partially or non-hydrogenated vinyl aromatic/conjugated diene block copolymer, a styrenic polymer, hydrogenated polystyrene, an other hydrogenated vinyl aromatic/conjugated diene block copolymer,  
10 and a cyclic olefin (co) polymer derived from monomers selected from the following group: substituted and unsubstituted norbornenes, dicyclopentadienes, dihydrodicyclopentadienes, trimers of cyclopentadiene, tetracyclododecenes, hexacycloheptadecenes, ethylenyl norbornenes and vinylnorbornenes.

15 19. The composition of Claim 17 wherein the composition additionally comprises a compatibilizer.

20. The composition of Claim 15 wherein the stabilizer is an alkali or amine fatty acid salt or stearate; polyoxyethylene nonionic; alkali metal lauryl sulfate, quaternary ammonium surfactant; alkali metal alkylbenzene sulfonate, or an alkali metal soap.

21. An article produced from the composition of Claim 15.